



## SEQUENCE LISTING

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<120> INTERFERON VARIANTS WITH IMPROVED PROPERTIES

<130> A-71431-4

<140> US 10/820,467  
<141> 2004-03-30

<150> US 60/477,246  
<151> 2003-06-10

<150> US 60/415,541  
<151> 2002-10-01

<150> US 60/489,725  
<151> 2003-07-24

<150> US 10/676,705  
<151> 2003-09-30

<160> 274

<170> PatentIn version 3.2

<210> 1  
<211> 189  
<212> PRT  
<213> Homo sapiens

<400> 1

Met Ala Ser Pro Phe Ala Leu Leu Met Val Leu Val Val Leu Ser Cys  
1 5 10 15

Lys Ser Ser Cys Ser Leu Gly Cys Asp Leu Pro Glu Thr His Ser Leu  
20 25 30

Asp Asn Arg Arg Thr Leu Met Leu Leu Ala Gln Met Ser Arg Ile Ser  
35 40 45

Pro Ser Ser Cys Leu Met Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Pro Ala Ile Ser Val Leu  
65 70 75 80

His Glu Leu Ile Gln Gln Ile Phe Asn Leu Phe Thr Thr Lys Asp Ser  
85 90 95

Ser Ala Ala Trp Asp Glu Asp Leu Leu Asp Lys Phe Cys Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Glu Arg  
115 120 125

Val Gly Glu Thr Pro Leu Met Asn Ala Asp Ser Ile Leu Ala Val Lys  
130 135 140

Lys Tyr Phe Arg Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
165 170 175

Leu Ser Thr Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
180 185

<210> 2  
<211> 165  
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<213> Homo sapiens

<400> 2

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met  
1 5 10 15

Leu Leu Ala Gln Met Arg Lys Ile Ser Leu Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln  
35 40 45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe  
50 55 60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu  
65 70 75 80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu  
85 90 95

Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys

100	105	110
Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu		
115	120	125
Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg		
130	135	140
Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser		
145	150	155
160		
Leu Arg Ser Lys Glu		
165		
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<213> Homo sapiens		
<400> 3		
Met Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu		
1	5	10
15		
Met Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys		
20	25	30
Asp Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe		
35	40	45
Gln Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile		
50	55	60
Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr		
65	70	75
80		
Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu		
85	90	95
Glu Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met		
100	105	110
Lys Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr		
115	120	125
Leu Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val		
130	135	140

Arg Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu  
 145 150 155 160

Ser Leu Arg Ser Lys Glu  
 165

<210> 4  
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 <213> Homo sapiens

<400> 4

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
 35 40 45

His Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Glu Glu  
 50 55 60

Glu Phe Asp Gly His Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
 85 90 95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
 100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
 115 120 125

Val Glu Glu Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
 165 170 175

Phe Ser Thr Asn Leu Gln Lys Arg Leu Arg Arg Lys Asp

180

185

<210> 5  
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 <213> Homo sapiens

<400> 5

Met Ala Leu Pro Phe Val Leu Leu Met Ala Leu Val Val Leu Asn Cys  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Ser Asn Arg Arg Thr Leu Met Ile Met Ala Gln Met Gly Arg Ile Ser  
 35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
 50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
 85 90 95

Ser Ala Thr Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu  
 100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Met Met Gln Glu Val Gly  
 115 120 125

Val Glu Asp Thr Pro Leu Met Asn Val Asp Ser Ile Leu Thr Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175

Leu Ser Ala Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
 180 185

<210> 6  
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 <212> PRT

<213> Homo sapiens

<400> 6

Met Ala Leu Pro Phe Ala Leu Leu Met Ala Leu Val Val Leu Ser Cys  
1 5 10 15

Lys Ser Ser Cys Ser Leu Asp Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Gly His Arg Arg Thr Met Met Leu Leu Ala Gln Met Arg Arg Ile Ser  
35 40 45

Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Arg Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Glu Ala Ile Ser Val Leu  
65 70 75 80

His Glu Val Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
85 90 95

Ser Val Ala Trp Asp Glu Arg Leu Leu Asp Lys Leu Tyr Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Val Trp  
115 120 125

Val Gly Gly Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
165 170 175

Ser Ser Arg Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
180 185

<210> 7

<211> 189

<212> PRT

<213> Homo sapiens

<400> 7

Met Ala Arg Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Arg Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Glu Phe Arg Phe Pro Glu Glu  
50 55 60

Glu Phe Asp Gly His Gln Phe Gln Lys Thr Gln Ala Ile Ser Val Leu  
65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
85 90 95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
115 120 125

Val Glu Glu Thr Pro Leu Met Asn Glu Asp Phe Ile Leu Ala Val Arg  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
165 170 175

Phe Ser Thr Asn Leu Lys Lys Gly Leu Arg Arg Lys Asp  
180 185

<210> 8  
<211> 189  
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<213> Homo sapiens

<400> 8

Met Ala Leu Thr Phe Tyr Leu Met Val Ala Leu Val Val Leu Ser Tyr  
1 5 10 15

Lys Ser Phe Ser Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Arg Arg Ile Ser  
 35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Glu Phe Pro Gln Glu  
 50 55 60

Glu Phe Asp Asp Lys Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
 85 90 95

Ser Ala Ala Leu Asp Glu Thr Leu Leu Asp Glu Phe Tyr Ile Glu Leu  
 100 105 110

Asp Gln Gln Leu Asn Asp Leu Glu Val Leu Cys Asp Gln Glu Val Gly  
 115 120 125

Val Ile Glu Ser Pro Leu Met Tyr Glu Asp Ser Ile Leu Ala Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Ser Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175

Leu Ser Ile Asn Leu Gln Lys Arg Leu Lys Ser Lys Glu  
 180 185

<210> 9  
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 <212> PRT  
 <213> Homo sapiens

<400> 9

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Gly Gln Met Gly Arg Ile Ser  
 35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Arg Ile Pro Gln Glu  
 50 55 60



Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
85 90 95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
115 120 125

Val Glu Glu Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Ile Glu Arg Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
165 170 175

Phe Ser Thr Asn Leu Gln Lys Arg Leu Arg Arg Lys Asp  
180 185

<210> 10  
<211> 189  
<212> PRT  
<213> Homo sapiens

<400> 10

Met Ala Ser Pro Phe Ala Leu Leu Met Ala Leu Val Val Leu Ser Cys  
1 5 10 15

Lys Ser Ser Cys Ser Leu Gly Cys Asp Leu Pro Glu Thr His Ser Leu  
20 25 30

Asp Asn Arg Arg Thr Leu Met Leu Leu Ala Gln Met Ser Arg Ile Ser  
35 40 45

Pro Ser Ser Cys Leu Met Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Pro Ala Ile Ser Val Leu  
65 70 75 80

His Glu Leu Ile Gln Gln Ile Phe Asn Leu Phe Thr Thr Lys Asp Ser  
85 90 95

Ser Ala Ala Trp Asp Glu Asp Leu Leu Asp Lys Phe Cys Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Glu Arg  
115 120 125

Val Gly Glu Thr Pro Leu Met Asn Ala Asp Ser Ile Leu Ala Val Lys  
130 135 140

Lys Tyr Phe Arg Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
165 170 175

Leu Ser Thr Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
180 185

<210> 11  
<211> 189  
<212> PRT  
<213> Homo sapiens

<400> 11

Met Ala Leu Pro Phe Ala Leu Met Met Ala Leu Val Val Leu Ser Cys  
1 5 10 15

Lys Ser Ser Cys Ser Leu Gly Cys Asn Leu Ser Gln Thr His Ser Leu  
20 25 30

Asn Asn Arg Arg Thr Leu Met Leu Met Ala Gln Met Arg Arg Ile Ser  
35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Glu Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
65 70 75 80

His Glu Met Met Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asn Ser  
85 90 95

Ser Ala Ala Trp Asp Glu Thr Leu Leu Glu Lys Phe Tyr Ile Glu Leu  
100 105 110

Phe Gln Gln Met Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
 115 120 125

Val Glu Glu Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Lys  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Met Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175

Phe Ser Thr Asn Leu Gln Lys Arg Leu Arg Arg Lys Asp  
 180 185

<210> 12  
 <211> 189  
 <212> PRT  
 <213> Homo sapiens

<400> 12

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
 35 40 45

His Phe Ser Cys Leu Lys Asp Arg Tyr Asp Phe Gly Phe Pro Gln Glu  
 50 55 60

Val Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Ala Phe  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
 85 90 95

Ser Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Ile Glu Leu  
 100 105 110

Phe Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Thr Gln Glu Val Gly  
 115 120 125

Val Glu Glu Ile Ala Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Met Gly Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175

Phe Ser Thr Asn Leu Gln Lys Gly Leu Arg Arg Lys Asp  
 180 185

<210> 13  
 <211> 189  
 <212> PRT  
 <213> Homo sapiens

<400> 13

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
 35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Leu Pro Gln Glu  
 50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Thr Gln Ala Ile Ser Val Leu  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
 85 90 95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
 100 105 110

Tyr Gln Gln Leu Asn Asn Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
 115 120 125

Met Glu Glu Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
165 170 175

Phe Ser Thr Asn Leu Gln Lys Ile Leu Arg Arg Lys Asp  
180 185

<210> 14  
<211> 189  
<212> PRT  
<213> Homo sapiens

<400> 14

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
85 90 95

Ser Ala Thr Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
100 105 110

Asn Gln Gln Leu Asn Asp Met Glu Ala Cys Val Ile Gln Glu Val Gly  
115 120 125

Val Glu Glu Thr Pro Leu Met Asn Val Asp Ser Ile Leu Ala Val Lys  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
165 170 175

Leu Ser Lys Ile Phe Gln Glu Arg Leu Arg Arg Lys Glu  
 180 185

<210> 15  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 15

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 16  
 <211> 207  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Met Ser Thr Lys Pro Asp Met Ile Gln Lys Cys Leu Trp Leu Glu Ile  
 1 5 10 15

Leu Met Gly Ile Phe Ile Ala Gly Thr Leu Ser Leu Asp Cys Asn Leu  
 20 25 30

Leu Asn Val His Leu Arg Arg Val Thr Trp Gln Asn Leu Arg His Leu  
 35 40 45

Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys Leu Arg Glu Asn Ile  
 50 55 60

Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr Thr Gln Pro Met Lys  
 65 70 75 80

Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser Leu Gln Ala Phe Asn  
 85 90 95

Ile Phe Ser Gln His Thr Phe Lys Tyr Trp Lys Glu Arg His Leu Lys  
 100 105 110

Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu Tyr Leu Asn Gln Cys  
 115 120 125

Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met Lys Glu Met Lys Glu  
 130 135 140

Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro Gln Leu Ser Ser Leu  
 145 150 155 160

Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn Phe Leu Lys Glu Lys  
 165 170 175

Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg Val Glu Ile Arg Arg  
 180 185 190

Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu Phe Arg Arg Lys  
 195 200 205

<210> 17  
 <211> 208  
 <212> PRT  
 <213> Homo sapiens

<400> 17

Met Ile Ile Lys His Phe Phe Gly Thr Val Leu Val Leu Leu Ala Ser

1	5	10	15
Thr Thr Ile Phe Ser Leu Asp Leu Lys Leu Ile Ile Phe Gln Gln Arg	20	25	30
Gln Val Asn Gln Glu Ser Leu Lys Leu Leu Asn Lys Leu Gln Thr Leu	35	40	45
Ser Ile Gln Gln Cys Leu Pro His Arg Lys Asn Phe Leu Leu Pro Gln	50	55	60
Lys Ser Leu Ser Pro Gln Gln Tyr Gln Lys Gly His Thr Leu Ala Ile	65	70	75
Leu His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe Arg Ala Asn Ile	85	90	95
Ser Leu Asp Gly Trp Glu Glu Asn His Thr Glu Lys Phe Leu Ile Gln	100	105	110
Leu His Gln Gln Leu Glu Tyr Leu Glu Ala Leu Met Gly Leu Glu Ala	115	120	125
Glu Lys Leu Ser Gly Thr Leu Gly Ser Asp Asn Leu Arg Leu Gln Val	130	135	140
Lys Met Tyr Phe Arg Arg Ile His Asp Tyr Leu Glu Asn Gln Asp Tyr	145	150	155
Ser Thr Cys Ala Trp Ala Ile Val Gln Val Glu Ile Ser Arg Cys Leu	165	170	175
Phe Phe Val Phe Ser Leu Thr Glu Lys Leu Ser Lys Gln Gly Arg Pro	180	185	190
Leu Asn Asp Met Lys Gln Glu Leu Thr Thr Glu Phe Arg Ser Pro Arg	195	200	205
<210> 18			
<211> 195			
<212> PRT			
<213> Homo sapiens			
<400> 18			
Met Ala Leu Leu Phe Pro Leu Leu Ala Ala Leu Val Met Thr Ser Tyr	1	5	10
			15



Ser Pro Val Gly Ser Leu Gly Cys Asp Leu Pro Gln Asn His Gly Leu  
20 25 30

Leu Ser Arg Asn Thr Leu Val Leu Leu His Gln Met Arg Arg Ile Ser  
35 40 45

Pro Phe Leu Cys Leu Lys Asp Arg Arg Asp Phe Arg Phe Pro Gln Glu  
50 55 60

Met Val Lys Gly Ser Gln Leu Gln Lys Ala His Val Met Ser Val Leu  
65 70 75 80

His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe His Thr Glu Arg Ser  
85 90 95

Ser Ala Ala Trp Asn Met Thr Leu Leu Asp Gln Leu His Thr Gly Leu  
100 105 110

His Gln Gln Leu Gln His Leu Glu Thr Cys Leu Leu Gln Val Val Gly  
115 120 125

Glu Gly Glu Ser Ala Gly Ala Ile Ser Ser Pro Ala Leu Thr Leu Arg  
130 135 140

Arg Tyr Phe Gln Gly Ile Arg Val Tyr Leu Lys Glu Lys Lys Tyr Ser  
145 150 155 160

Asp Cys Ala Trp Glu Val Val Arg Met Glu Ile Met Lys Ser Leu Phe  
165 170 175

Leu Ser Thr Asn Met Gln Glu Arg Leu Arg Ser Lys Asp Arg Asp Leu  
180 185 190

Gly Ser Ser  
195

<210> 19  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 19

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 20  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 20

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln

35                                      40                                      45  
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
     50                                      55                                      60  
 Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
     65                                      70                                      75                                      80  
 Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
                                     85                                      90                                      95  
 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
                                     100                                      105                                      110  
 Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
                                     115                                      120                                      125  
 Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
                                     130                                      135                                      140  
 Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
     145                                      150                                      155                                      160  
 Thr Gly Tyr Leu Arg Asn  
                                     165  
  
 <210> 21  
 <211> 166  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> synthetic  
  
 <400> 21  
  
 Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
     1                                      5                                      10                                      15  
 Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
                                     20                                      25                                      30  
 Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
                                     35                                      40                                      45  
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
     50                                      55                                      60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 22  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 22

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 23  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 23

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 24  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 24

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu

145                      150                      155                      160  
 Thr Gly Tyr Leu Arg Asn  
                                  165  
  
 <210> 25  
 <211> 166  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> synthetic  
  
 <400> 25  
  
 Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1                                   5                                   10                                   15  
  
 Ser Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
                                  20                                   25                                   30  
  
 Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
                                  35                                   40                                   45  
  
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
                                  50                                   55                                   60  
  
 Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65                                   70                                   75                                   80  
  
 Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
                                  85                                   90                                   95  
  
 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
                                  100                                   105                                   110  
  
 Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
                                  115                                   120                                   125  
  
 Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
                                  130                                   135                                   140  
  
 Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145                                   150                                   155                                   160  
  
 Thr Gly Tyr Leu Arg Asn  
                                  165

<210> 26  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 26

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Arg Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 27  
 <211> 180  
 <212> PRT



<213> Artificial

<220>

<223> synthetic

<400> 27

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 28

<211> 180

<212> PRT

<213> Artificial

<220>

<223> synthetic

<400> 28

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 29

<211> 180

<212> PRT

<213> Artificial

<220>

<223> synthetic

<400> 29

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 30  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 30

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 31  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 31

Cys Asp Leu Pro Glu Thr His Ser Leu Asp Asn Arg Arg Thr Leu Met  
 1 5 10 15

Leu Leu Ala Gln Met Ser Arg Ile Ser Pro Ser Ser Cys Leu Met Asp  
 20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
 35 40 45

Gln Lys Ala Pro Ala Ile Ser Val Leu His Glu Leu Ile Gln Gln Ile  
 50 55 60

Phe Asn Leu Phe Thr Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Asp  
 65 70 75 80

Leu Leu Asp Lys Phe Cys Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
 85 90 95

Glu Ala Cys Val Met Gln Glu Glu Arg Val Gly Glu Thr Pro Leu Met  
 100 105 110

Asn Ala Asp Ser Ile Leu Ala Val Lys Lys Tyr Phe Arg Arg Ile Thr  
 115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Leu Ser Leu Ser Thr Asn Leu Gln Glu  
 145 150 155 160

Arg Leu Arg Arg Lys Glu  
 165

<210> 32  
 <211> 165  
 <212> PRT  
 <213> Homo sapiens

<400> 32

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met  
 1 5 10 15

Leu Leu Ala Gln Met Arg Lys Ile Ser Leu Phe Ser Cys Leu Lys Asp  
 20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln  
 35 40 45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe  
 50 55 60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu  
 65 70 75 80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu  
85 90 95

Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys  
100 105 110

Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu  
115 120 125

Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg  
130 135 140

Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser  
145 150 155 160

Leu Arg Ser Lys Glu  
165

<210> 33  
<211> 165  
<212> PRT  
<213> Homo sapiens

<400> 33

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met  
1 5 10 15

Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln  
35 40 45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe  
50 55 60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu  
65 70 75 80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu  
85 90 95

Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys  
100 105 110

Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu  
 115 120 125

Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg  
 130 135 140

Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser  
 145 150 155 160

Leu Arg Ser Lys Glu  
 165

<210> 34  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 34

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile  
 1 5 10 15

Leu Leu Ala Gln Met Gly Arg Ile Ser His Phe Ser Cys Leu Lys Asp  
 20 25 30

Arg His Asp Phe Gly Phe Pro Glu Glu Glu Phe Asp Gly His Gln Phe  
 35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
 50 55 60

Phe Asn Leu Phe Ser Thr Glu Asp Ser Ser Ala Ala Trp Glu Gln Ser  
 65 70 75 80

Leu Leu Glu Lys Phe Ser Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
 85 90 95

Glu Ala Cys Val Ile Gln Glu Val Gly Val Glu Glu Thr Pro Leu Met  
 100 105 110

Asn Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
 115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Leu Ser Phe Ser Thr Asn Leu Gln Lys  
 145 150 155 160

Arg Leu Arg Arg Lys Asp  
165

<210> 35  
<211> 166  
<212> PRT  
<213> Homo sapiens

<400> 35

Cys Asp Leu Pro Gln Thr His Ser Leu Ser Asn Arg Arg Thr Leu Met  
1 5 10 15

Ile Met Ala Gln Met Gly Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Thr Trp Asp Glu Thr  
65 70 75 80

Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
85 90 95

Glu Ala Cys Met Met Gln Glu Val Gly Val Glu Asp Thr Pro Leu Met  
100 105 110

Asn Val Asp Ser Ile Leu Thr Val Arg Lys Tyr Phe Gln Arg Ile Thr  
115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Ala Asn Leu Gln Glu  
145 150 155 160

Arg Leu Arg Arg Lys Glu  
165

<210> 36  
<211> 166  
<212> PRT  
<213> Homo sapiens



<400> 36

Cys Asp Leu Pro Gln Thr His Ser Leu Gly His Arg Arg Thr Met Met  
1 5 10 15

Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Arg Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
35 40 45

Gln Lys Ala Glu Ala Ile Ser Val Leu His Glu Val Ile Gln Gln Thr  
50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Val Ala Trp Asp Glu Arg  
65 70 75 80

Leu Leu Asp Lys Leu Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
85 90 95

Glu Ala Cys Val Met Gln Glu Val Trp Val Gly Gly Thr Pro Leu Met  
100 105 110

Asn Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Ser Ser Arg Asn Leu Gln Glu  
145 150 155 160

Arg Leu Arg Arg Lys Glu  
165

<210> 37

<211> 166

<212> PRT

<213> Homo sapiens

<400> 37

Cys Asp Leu Pro Gln Thr His Ser Leu Arg Asn Arg Arg Ala Leu Ile  
1 5 10 15

Leu Leu Ala Gln Met Gly Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Glu Phe Arg Phe Pro Glu Glu Glu Phe Asp Gly His Gln Phe  
 35 40 45

Gln Lys Thr Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
 50 55 60

Phe Asn Leu Phe Ser Thr Glu Asp Ser Ser Ala Ala Trp Glu Gln Ser  
 65 70 75 80

Leu Leu Glu Lys Phe Ser Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
 85 90 95

Glu Ala Cys Val Ile Gln Glu Val Gly Val Glu Glu Thr Pro Leu Met  
 100 105 110

Asn Glu Asp Phe Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
 115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Phe Ser Thr Asn Leu Lys Lys  
 145 150 155 160

Gly Leu Arg Arg Lys Asp  
 165

<210> 38  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens  
 <400> 38

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile  
 1 5 10 15

Leu Leu Ala Gln Met Arg Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
 20 25 30

Arg His Asp Phe Glu Phe Pro Gln Glu Glu Phe Asp Asp Lys Gln Phe  
 35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
 50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Leu Asp Glu Thr



Asn Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
 115 120 125

Leu Tyr Leu Ile Glu Arg Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Leu Ser Phe Ser Thr Asn Leu Gln Lys  
 145 150 155 160

Arg Leu Arg Arg Lys Asp  
 165

<210> 40  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 40

Cys Asp Leu Pro Glu Thr His Ser Leu Asp Asn Arg Arg Thr Leu Met  
 1 5 10 15

Leu Leu Ala Gln Met Ser Arg Ile Ser Pro Ser Ser Cys Leu Met Asp  
 20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
 35 40 45

Gln Lys Ala Pro Ala Ile Ser Val Leu His Glu Leu Ile Gln Gln Ile  
 50 55 60

Phe Asn Leu Phe Thr Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Asp  
 65 70 75 80

Leu Leu Asp Lys Phe Cys Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu  
 85 90 95

Glu Ala Cys Val Met Gln Glu Glu Arg Val Gly Glu Thr Pro Leu Met  
 100 105 110

Asn Ala Asp Ser Ile Leu Ala Val Lys Lys Tyr Phe Arg Arg Ile Thr  
 115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Leu Ser Leu Ser Thr Asn Leu Gln Glu

145 150 155 160

Arg Leu Arg Arg Lys Glu  
165

<210> 41  
<211> 166  
<212> PRT  
<213> Homo sapiens

<400> 41

Cys Asn Leu Ser Gln Thr His Ser Leu Asn Asn Arg Arg Thr Leu Met  
1 5 10 15

Leu Met Ala Gln Met Arg Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Glu Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Met Gln Gln Thr  
50 55 60

Phe Asn Leu Phe Ser Thr Lys Asn Ser Ser Ala Ala Trp Asp Glu Thr  
65 70 75 80

Leu Leu Glu Lys Phe Tyr Ile Glu Leu Phe Gln Gln Met Asn Asp Leu  
85 90 95

Glu Ala Cys Val Ile Gln Glu Val Gly Val Glu Glu Thr Pro Leu Met  
100 105 110

Asn Glu Asp Ser Ile Leu Ala Val Lys Lys Tyr Phe Gln Arg Ile Thr  
115 120 125

Leu Tyr Leu Met Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Phe Ser Thr Asn Leu Gln Lys  
145 150 155 160

Arg Leu Arg Arg Lys Asp  
165

<210> 42  
<211> 166  
<212> PRT

<213> Homo sapiens

<400> 42

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile  
1 5 10 15

Leu Leu Ala Gln Met Gly Arg Ile Ser His Phe Ser Cys Leu Lys Asp  
20 25 30

Arg Tyr Asp Phe Gly Phe Pro Gln Glu Val Phe Asp Gly Asn Gln Phe  
35 40 45

Gln Lys Ala Gln Ala Ile Ser Ala Phe His Glu Met Ile Gln Gln Thr  
50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr  
65 70 75 80

Leu Leu Asp Lys Phe Tyr Ile Glu Leu Phe Gln Gln Leu Asn Asp Leu  
85 90 95

Glu Ala Cys Val Thr Gln Glu Val Gly Val Glu Glu Ile Ala Leu Met  
100 105 110

Asn Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
115 120 125

Leu Tyr Leu Met Gly Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Phe Ser Thr Asn Leu Gln Lys  
145 150 155 160

Gly Leu Arg Arg Lys Asp  
165

<210> 43

<211> 166

<212> PRT

<213> Homo sapiens

<400> 43

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile  
1 5 10 15

Leu Leu Ala Gln Met Gly Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Gly Leu Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
 35 40 45

Gln Lys Thr Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
 50 55 60

Phe Asn Leu Phe Ser Thr Glu Asp Ser Ser Ala Ala Trp Glu Gln Ser  
 65 70 75 80

Leu Leu Glu Lys Phe Ser Thr Glu Leu Tyr Gln Gln Leu Asn Asn Leu  
 85 90 95

Glu Ala Cys Val Ile Gln Glu Val Gly Met Glu Glu Thr Pro Leu Met  
 100 105 110

Asn Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr  
 115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
 130 135 140

Arg Ala Glu Ile Met Arg Ser Leu Ser Phe Ser Thr Asn Leu Gln Lys  
 145 150 155 160

Ile Leu Arg Arg Lys Asp  
 165

<210> 44  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 44

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile  
 1 5 10 15

Leu Leu Ala Gln Met Gly Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp  
 20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Asp Gly Asn Gln Phe  
 35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr  
 50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Thr Trp Glu Gln Ser  
65 70 75 80

Leu Leu Glu Lys Phe Ser Thr Glu Leu Asn Gln Gln Leu Asn Asp Met  
85 90 95

Glu Ala Cys Val Ile Gln Glu Val Gly Val Glu Glu Thr Pro Leu Met  
100 105 110

Asn Val Asp Ser Ile Leu Ala Val Lys Lys Tyr Phe Gln Arg Ile Thr  
115 120 125

Leu Tyr Leu Thr Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val  
130 135 140

Arg Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Lys Ile Phe Gln Glu  
145 150 155 160

Arg Leu Arg Arg Lys Glu  
165

<210> 45  
<211> 179  
<212> PRT  
<213> Homo sapiens

<400> 45

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Phe Lys Tyr Trp Lys  
65 70 75 80

Glu Arg His Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu Tyr  
85 90 95

Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met Lys  
100 105 110



Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro Gln  
 115 120 125

Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn Phe  
 130 135 140

Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg Val  
 145 150 155 160

Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu Phe  
 165 170 175

Arg Arg Lys

<210> 46  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 46

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 47  
 <211> 152  
 <212> PRT  
 <213> Homo sapiens

<400> 47

Cys Tyr Leu Ser Arg Lys Leu Met Leu Asp Ala Arg Glu Asn Leu Lys  
 1 5 10 15

Leu Leu Asp Arg Met Asn Arg Leu Ser Pro His Ser Cys Leu Gln Asp  
 20 25 30

Arg Lys Asp Phe Gly Leu Pro Gln Glu Met Val Glu Gly Asp Gln Leu  
 35 40 45

Gln Lys Asp Gln Ala Phe Pro Val Leu Tyr Glu Met Leu Gln Gln Ser  
 50 55 60

Phe Asn Leu Phe Tyr Thr Glu His Ser Ser Ala Ala Trp Asp Thr Thr  
 65 70 75 80

Leu Leu Glu Gln Leu Cys Thr Gly Leu Gln Gln Gln Leu Asp His Leu  
 85 90 95

Asp Thr Cys Arg Gly Met Asp Pro Ile Val Thr Val Lys Lys Tyr Phe  
 100 105 110

Gln Gly Ile Tyr Asp Tyr Leu Gln Glu Lys Gly Tyr Ser Asp Cys Ala  
 115 120 125

Trp Glu Ile Val Arg Val Glu Met Met Arg Ala Leu Thr Val Ser Thr  
 130 135 140

Thr Leu Gln Lys Arg Leu Thr Lys  
 145 150

<210> 48  
 <211> 165

<212> PRT  
<213> Homo sapiens

<400> 48

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met  
1 5 10 15

Leu Leu Ala Gln Met Arg Lys Ile Ser Leu Phe Ser Cys Leu Lys Asp  
20 25 30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln  
35 40 45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe  
50 55 60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu  
65 70 75 80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu  
85 90 95

Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys  
100 105 110

Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu  
115 120 125

Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg  
130 135 140

Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser  
145 150 155 160

Leu Arg Ser Lys Glu  
165

<210> 49  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 49

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 50  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 50

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln

35                                      40                                      45  
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
     50                                      55                                      60  
 Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
     65                                      70                                      75                                      80  
 Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
                                     85                                      90                                      95  
 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
                                     100                                      105                                      110  
 Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
                                     115                                      120                                      125  
 Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
     130                                      135                                      140  
 Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
     145                                      150                                      155                                      160  
 Thr Gly Tyr Leu Arg Asn  
                                     165  
  
 <210> 51  
 <211> 166  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> synthetic  
  
 <400> 51  
  
 Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
     1                                      5                                      10                                      15  
 Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
                                     20                                      25                                      30  
 Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
                                     35                                      40                                      45  
 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
     50                                      55                                      60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 52  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 52

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 53  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 53

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 54  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 54

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu





<210> 56  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 56

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 57  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 57

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 58

<211> 166

<212> PRT

<213> Artificial

<220>

<223> synthetic

<400> 58

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 59  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 59

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 60  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 60

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 61  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 61

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr

	100		105		110
Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg	115		120		125
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr	130		135		140
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu	145		150		155
Thr Gly Tyr Leu Arg Asn	165				
<210> 62					
<211> 166					
<212> PRT					
<213> Artificial					
<220>					
<223> synthetic					
<400> 62					
Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln	1		5		10
Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu	20		25		30
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln	35		40		45
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln	50		55		60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn	65		70		75
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn	85		90		95
His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr	100		105		110
Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg	115		120		125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 63  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 63

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160



Thr Gly Tyr Leu Arg Asn  
165

<210> 64  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 64

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 65  
<211> 166

<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 65

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 66  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 66

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 67  
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<220>  
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<400> 67

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 68  
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<220>  
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<400> 68

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln



Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 70  
<211> 166  
<212> PRT  
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<400> 70

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 71  
 <211> 166  
 <212> PRT  
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<220>  
 <223> synthetic

<400> 71

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 72  
 <211> 166  
 <212> PRT  
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<220>  
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<400> 72

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn



165

<210> 73  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 73

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 74  
<211> 166  
<212> PRT  
<213> Artificial

<220>

<223> synthetic

<400> 74

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 75

<211> 166

<212> PRT

<213> Artificial

<220>

<223> synthetic

<400> 75

Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln

1	5	10	15
Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu	20	25	30
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln	35	40	45
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln	50	55	60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn	65	70	75
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn	85	90	95
His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr	100	105	110
Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg	115	120	125
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr	130	135	140
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu	145	150	155
Thr Gly Tyr Leu Arg Asn	165		

<210> 76  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 76

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln	1	5	10	15
---	---	---	----	----

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu	20	25	30
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Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 77  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 77

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 78  
<211> 166  
<212> PRT  
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<220>  
<223> synthetic

<400> 78

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 79  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 79

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Leu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg

115	120	125
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr		
130	135	140
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu		
145	150	155
160		
Thr Gly Tyr Leu Arg Asn		
165		
<210> 80		
<211> 166		
<212> PRT		
<213> Artificial		
<220>		
<223> synthetic		
<400> 80		
Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln		
1	5	10
15		
Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu		
20	25	30
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln		
35	40	45
Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln		
50	55	60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn		
65	70	75
80		
Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn		
85	90	95
His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr		
100	105	110
Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg		
115	120	125
Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr		
130	135	140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 81  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 81

Met Ser Tyr Asn Gln Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165



<210> 82  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 82

Met Ser Tyr Asn Leu Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 83  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>

<223> synthetic

<400> 83

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 84

<211> 166

<212> PRT

<213> Artificial

<220>

<223> synthetic

<400> 84

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
100 105 110

Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 85  
<211> 166  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 85

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Leu Gln  
35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 65 70 75 80

Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 85 90 95

His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr  
 100 105 110

Arg Gly Lys Glu Met Ser Ser Arg His Leu Lys Arg Tyr Tyr Gly Arg  
 115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 145 150 155 160

Thr Gly Tyr Leu Arg Asn  
 165

<210> 86  
 <211> 166  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 86

Met Ser Tyr Asn Gln Leu Gly Glu Leu Gln Arg Ser Ser Asn Phe Gln  
 1 5 10 15

Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu  
 20 25 30

Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Lys Gln  
 35 40 45

Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 50 55 60

Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn

65		70		75		80
Glu Thr Ile Val	Glu Asn Leu Leu Ala	Asn Val Tyr His Gln Ile Asn				
	85	90			95	
His Leu Lys Thr Val	Leu Glu Glu Lys Leu Glu Lys Glu Asp Asn Thr					
	100	105			110	
Arg Gly Lys Glu Met Ser Ser	Arg His Leu Lys Arg Tyr Tyr Gly Arg					
	115	120			125	
Ile Leu His Tyr Leu Lys	Ala Lys Glu Tyr Ser His Cys Ala Trp Thr					
	130	135			140	
Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu						
145	150		155			160
Thr Gly Tyr Leu Arg Asn						
	165					
<210> 87						
<211> 166						
<212> PRT						
<213> Artificial						
<220>						
<223> synthetic						
<400> 87						
Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg Ser Ser Asn Phe Gln						
1	5		10			15
Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg Leu Glu Tyr Cys Leu						
	20		25			30
Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu Ile Lys Gln Ser Gln						
	35		40			45
Gln Ser Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln						
	50		55			60
Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn						
65		70		75		80
Glu Thr Ile Val	Glu Asn Leu Leu Ala	Asn Val Tyr His Gln Ile Asn				
	85	90			95	

His Leu Lys Thr Val Leu Glu Glu Lys Ser Glu Lys Glu Asp Ser Thr  
100 105 110

Arg Gly Lys Ser Met Ser Ser Ser His Leu Lys Arg Tyr Tyr Gly Arg  
115 120 125

Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
130 135 140

Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
145 150 155 160

Thr Gly Tyr Leu Arg Asn  
165

<210> 88  
<211> 180  
<212> PRT  
<213> Homo sapiens

<400> 88

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Phe Lys Tyr Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 89  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 89

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Arg Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg

145		150		155		160									
Val	Glu	Ile	Arg	Arg	Cys	Leu	Tyr	Tyr	Phe	Tyr	Lys	Phe	Thr	Ala	Leu
				165					170					175	
Phe	Arg	Arg	Lys												
			180												
<210> 90															
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<212> PRT															
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1				5					10					15	
Asn	Leu	Arg	His	Leu	Ser	Ser	Met	Ser	Asn	Ser	Phe	Pro	Val	Glu	Cys
			20					25					30		
Leu	Arg	Glu	Asn	Ile	Ala	Phe	Glu	Leu	Pro	Gln	Glu	Phe	Leu	Gln	Gln
		35					40					45			
Thr	Gln	Pro	Asn	Lys	Arg	Asp	Ile	Lys	Lys	Ala	Phe	Tyr	Glu	Met	Ser
	50					55					60				
Leu	Gln	Ala	Phe	Asn	Ile	Phe	Ser	Gln	His	Thr	Ser	Lys	Ala	Trp	Lys
65					70					75					80
Glu	Arg	His	Leu	Lys	Gln	Ile	Gln	Thr	Gly	Leu	Asp	Gln	Gln	Ala	Glu
				85					90					95	
~															
Tyr	Leu	Asn	Gln	Cys	Leu	Glu	Glu	Asp	Glu	Asn	Glu	Asn	Glu	Asp	Met
			100					105					110		
Lys	Glu	Met	Lys	Glu	Asn	Glu	Met	Lys	Pro	Ser	Glu	Ala	Arg	Val	Pro
		115					120					125			
Gln	Leu	Ser	Ser	Leu	Glu	Leu	Arg	Arg	Tyr	Phe	His	Arg	Ile	Asp	Asn
	130					135					140				
Phe	Leu	Lys	Glu	Lys	Lys	Tyr	Ser	Asp	Cys	Ala	Trp	Glu	Ile	Val	Arg
145					150					155					160



Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 91  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 91

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys  
20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 92  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 92

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Phe Lys Tyr Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 93  
 <211> 180  
 <212> PRT  
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<220>  
 <223> synthetic

<400> 93

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 94

<211> 180  
 <212> PRT  
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<220>  
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<400> 94

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 95  
 <211> 180  
 <212> PRT  
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<220>

<223> synthetic

<400> 95

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 , 175

Phe Arg Arg Lys  
180

<210> 96

<211> 180

<212> PRT

<213> Artificial

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<223> synthetic

<400> 96

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 97

<211> 180

<212> PRT

<213> Artificial

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<223> synthetic

<400> 97

Leu Asp Cys Asn Leu Leu Asn Asn His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 98  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 98

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 99  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 99

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30



Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 100  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 100

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln

35                                      40                                      45  
 Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50                                      55                                      60  
 Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65                                      70                                      75                                      80  
 Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85                                      90                                      95  
 Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100                                      105                                      110  
 Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115                                      120                                      125  
 Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130                                      135                                      140  
 Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145                                      150                                      155                                      160  
 Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165                                      170                                      175  
 Phe Arg Arg Lys  
 180

<210> 101  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 101

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
 1                                      5                                      10                                      15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20                                      25                                      30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35                                      40                                      45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 102  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 102

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 103  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
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<400> 103

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 104  
<211> 180  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic

<400> 104

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu

	85		90		95										
Asp	Leu	Asn	Gln	Cys	Leu	Glu	Glu	Asp	Glu	Asn	Glu	Asn	Glu	Asp	Met
			100					105						110	
Lys	Glu	Met	Lys	Glu	Asn	Glu	Met	Lys	Pro	Ser	Glu	Ala	Arg	Val	Pro
		115					120					125			
Gln	Leu	Ser	Ser	Leu	Glu	Leu	Arg	Arg	Tyr	Phe	His	Arg	Ile	Asp	Asn
	130					135					140				
Phe	Leu	Lys	Glu	Lys	Lys	Tyr	Ser	Asp	Cys	Ala	Trp	Glu	Ile	Val	Arg
145					150					155					160
Val	Glu	Ile	Arg	Arg	Cys	Leu	Tyr	Tyr	Phe	Tyr	Lys	Phe	Thr	Ala	Leu
				165					170					175	
Phe	Arg	Arg	Lys												
			180												
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Leu	Asp	Cys	Asn	Leu	Leu	Asn	Val	His	Leu	Arg	Arg	Val	Thr	Trp	Gln
1				5					10					15	
Asn	Leu	Arg	His	Leu	Ser	Ser	Met	Ser	Asn	Ser	Phe	Pro	Val	Glu	Cys
			20					25					30		
Leu	Arg	Glu	Asn	Ile	Ala	Phe	Glu	Leu	Pro	Gln	Glu	Phe	Leu	Gln	Gln
		35					40					45			
Thr	Gln	Pro	Asn	Lys	Arg	Asp	Ile	Lys	Lys	Ala	Phe	Tyr	Glu	Met	Ser
	50					55					60				
Leu	Gln	Ala	Phe	Asn	Ile	Phe	Ser	Gln	His	Thr	Ser	Lys	Ala	Trp	Lys
65					70					75					80
Glu	Arg	His	Leu	Lys	Gln	Ile	Gln	Ile	Gly	Leu	Asp	Gln	Gln	Ala	Glu
				85					90					95	

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 106  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 106

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Ala Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 107  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 107

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125



Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 108  
 <211> 180  
 <212> PRT  
 <213> Artificial

<220>  
 <223> synthetic

<400> 108

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn

130                                      135                                      140  
 Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145                                      150                                      155                                      160  
 Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
                                     165                                      170                                      175  
 Phe Arg Arg Lys  
                                     180  
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                                     20                                      25                                      30  
 Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
                                     35                                      40                                      45  
 Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
                                     50                                      55                                      60  
 Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Phe Lys Tyr Trp Lys  
 65                                      70                                      75                                      80  
 Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
                                     85                                      90                                      95  
 Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
                                     100                                      105                                      110  
 Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
                                     115                                      120                                      125  
 Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
                                     130                                      135                                      140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 110  
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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Ala Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

<210> 112  
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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys

180

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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Ala Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 115  
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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 118  
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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
 1 5 10 15

Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
 35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 119  
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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Trp Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Gln Pro Arg Glu Cys



Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Gln  
35 40 45

Thr Gln Pro Asn Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Thr Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Asp Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Ala Glu Ile Arg Arg Ala Leu Ser Tyr Phe Thr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
20 25 30

Leu Arg Glu Asn Ile Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
 65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
 85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
 100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
 115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
 130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
 145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
 165 170 175

Phe Arg Arg Lys  
 180

<210> 122

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<400> 122

Leu Asp Cys Asn Leu Leu Asn Val His Leu Arg Arg Val Thr Arg Gln  
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Asn Leu Arg His Leu Ser Ser Met Ser Asn Ser Phe Pro Val Glu Cys  
 20 25 30

Leu Arg Glu Asn Asn Ala Phe Glu Leu Pro Gln Glu Phe Leu Gln Tyr  
 35 40 45

Thr Gln Pro Met Lys Arg Asp Ile Lys Lys Ala Phe Tyr Glu Met Ser  
 50 55 60

Leu Gln Ala Phe Asn Ile Phe Ser Gln His Thr Ser Lys Ala Trp Lys  
65 70 75 80

Glu Arg His Leu Lys Gln Ile Gln Ile Gly Leu Asp Gln Gln Ala Glu  
85 90 95

Tyr Leu Asn Gln Cys Leu Glu Glu Asp Glu Asn Glu Asn Glu Asp Met  
100 105 110

Lys Glu Met Lys Glu Asn Glu Met Lys Pro Ser Glu Ala Arg Val Pro  
115 120 125

Gln Leu Ser Ser Leu Glu Leu Arg Arg Tyr Phe His Arg Ile Asp Asn  
130 135 140

Phe Leu Lys Glu Lys Lys Tyr Ser Asp Cys Ala Trp Glu Ile Val Arg  
145 150 155 160

Val Glu Ile Arg Arg Cys Leu Tyr Tyr Phe Tyr Lys Phe Thr Ala Leu  
165 170 175

Phe Arg Arg Lys  
180

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<400> 123

Tyr Asn Leu Leu Gly Phe Leu Gln Arg  
1 5

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<400> 124

Leu Leu Gly Phe Leu Gln Arg Ser Ser  
1 5

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Phe Leu Gln Arg Ser Ser Asn Phe Gln  
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<211> 9

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Leu Gln Arg Ser Ser Asn Phe Gln Cys  
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Phe Gln Cys Gln Lys Leu Leu Trp Gln  
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Trp Gln Leu Asn Gly Arg Leu Glu Tyr  
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Tyr Cys Leu Lys Asp Arg Met Asn Phe  
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Met Asn Phe Asp Ile Pro Glu Glu Ile  
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Leu Gln Gln Phe Gln Lys Glu Asp Ala  
1 5

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Leu Thr Ile Tyr Glu Met Leu Gln Asn  
1 5

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Tyr Glu Met Leu Gln Asn Ile Phe Ala  
1 5

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Leu Gln Asn Ile Phe Ala Ile Phe Arg  
1 5

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Phe Arg Gln Asp Ser Ser Ser Thr Gly  
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Trp Asn Glu Thr Ile Val Glu Asn Leu  
1 5

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Ile Asn His Leu Lys Thr Val Leu Glu  
1 5

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Leu Lys Arg Tyr Tyr Gly Arg Ile Leu  
1 5

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<400> 139

Tyr Tyr Gly Arg Ile Leu His Tyr Leu  
1 5

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Ile Leu His Tyr Leu Lys Ala Lys Glu  
1 5

<210> 141  
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<400> 141

Leu His Tyr Leu Lys Ala Lys Glu Tyr  
1 5

<210> 142

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<400> 142

Trp Thr Ile Val Arg Val Glu Ile Leu  
1 5

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<400> 143

Ile Val Arg Val Glu Ile Leu Arg Asn  
1 5

<210> 144  
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<400> 144

Val Arg Val Glu Ile Leu Arg Asn Phe  
1 5

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<400> 145

Val Glu Ile Leu Arg Asn Phe Tyr Phe  
1 5

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Leu Arg Asn Phe Tyr Phe Ile Asn Arg  
1 5

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Phe Tyr Phe Ile Asn Arg Leu Thr Gly  
1 5

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Phe Ile Asn Arg Leu Thr Gly Tyr Leu  
1 5

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Ile Asn Arg Leu Thr Gly Tyr Leu Arg  
1 5

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Trp Ser Leu Asn Gly Arg Leu Glu Tyr  
1 5

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Trp Asn Leu Asn Gly Arg Leu Glu Tyr  
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Trp Asp Leu Asn Gly Arg Leu Glu Tyr  
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Trp Glu Leu Asn Gly Arg Leu Glu Tyr  
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Trp His Leu Asn Gly Arg Leu Glu Tyr  
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Trp Lys Val Asn Gly Arg Leu Glu Tyr  
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<210> 156

<211> 9

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<400> 156

Trp Gln Val Asn Gly Arg Leu Glu Tyr  
1 5

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Trp Gln Phe Ser Gly Arg Leu Glu Tyr  
1 5

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Trp Gln Phe Thr Gly Arg Leu Glu Tyr  
1 5

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Trp Gln Phe Gly Gly Arg Leu Glu Tyr  
1 5

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<400> 160

Trp Gln Leu Ser Gly Arg Leu Glu Tyr  
1 5

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Trp Gln Leu Thr Gly Arg Leu Glu Tyr  
1 5

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Trp Gln Leu Gly Gly Arg Leu Glu Tyr  
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Trp Gln Leu Asn Ser Gln Leu Glu Tyr  
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Gln Ser Phe Asp Ile Pro Glu Glu Ile  
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Gln Asp Phe Asp Ile Pro Glu Glu Ile  
1 5

<210> 166

<211> 9

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<223> synthetic

<400> 166

Met Ser Phe Asp Ile Pro Glu Glu Ile  
1 5

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<400> 167

Met Thr Phe Asp Ile Pro Glu Glu Ile  
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